

REMARKS/ARGUMENTS

Applicants filed the present application for the express purpose of declaring an interference between this application and U.S. Patent No. 6,290,865 ("the '865 patent") which issued on September 18, 2001 to Applied Materials, Inc. The application for the '865 patent bears a filing date of November 30, 1998 and applicants have asked that they be accorded at least the filing date of parent Application Serial No. 09/041,901, that date being a number of months earlier, namely March 13, 1998. That application date would, of course, result in designating applicants as Senior party in the interference.

In response, the Examiner did not question the present application and its support for the claims copied from the '865 patent. As previously noted, claims 67-83 in this application have been copied verbatim from claim 1-17 of the Applied Materials '865 patent. The remaining claim 84 is intended as the proposed count. Thus, there is no issue as to whether claims 67-83 are supported by the present application.

In the outstanding Office Action, however, the Examiner raised two issues. First of all, the Examiner suggested that the claims copied for the purpose of provoking the interference are not supported in applicant's parent application, namely Application Serial No. 09/041,901, filed March 13, 1998, which has since issued as U.S. Patent No. 6,350,319 ("the '319 patent") The Examiner has thus held that the claims in this application are not supported by that parent application and therefore the claims herein are anticipated by the Applied Materials '865 patent.

The Examiner's position is essentially predicated on the premise that the present claims contemplate removal of a metal and that is not supported by the '319 patent. The Examiner correctly recognizes that the '319 patent describes supplying hydrogen fluoride liquid to the lower portion of the reaction chamber while supplying an inert fluid, such as nitrogen, to the upper surface of the wafer. The Examiner suggests that the '319 patent does not disclose or suggest removing a film of deposited metal.

The Examiner is respectfully requested to reconsider his position.

The '319 patent is quite explicit in describing a system like the '865 system in which both surfaces of a semiconductor wafer can be simultaneously treated with two different processing fluids. As the Examiner has observed, one system of the '319 patent contemplates HF liquid applied to the underside of the wafer while an inert fluid to protect the top surface of the wafer is simultaneously applied (Col. 10, ll. 31 et seq.):

"Still further, the ability to concurrently provide different fluids to the upper and lower surfaces of the wafer opens the opportunity implement novel processing operations. For example, a processing fluid, such as HF liquid, may be supplied to a lower fluid inlet of the reaction chamber for processing the lower wafer surface while an inert fluid, such as nitrogen gas, may be provided to the upper fluid inlet. As such, the HF liquid is allowed to react with the lower surface of the wafer while the upper surface of the wafer is effectively isolated from HF reactions."

And, of course, the '319 patent discloses depositing metal surfaces such as copper on the wafers, and thus contemplates the well-known process of HF etching of copper deposited on the back side of the wafer while the copper on the front side is protected from the HF by an inert fluid like nitrogen. See, for example, the disclosure of the '319 patent at column 9, lines 18 et seq. referring to, among other things, a variety of metal cleaning steps for electrodeposited copper on the wafer surface.

In sum, the '319 patent contemplates removing electrodeposited copper from one side of the wafer using HF while the other side of the wafer is protected by an inert fluid like nitrogen. That unmistakably provides support in the '319 patent for the claims copied from the '865 patent. Since those claims are supported in the parent application, the '865 patent is not prior art and therefore the Examiner's rejection based on § 102 must be withdrawn.

The Examiner has also rejected claim 84 as indefinite under § 112. The Examiner points out that the term "the material" of subparagraph (a) of the claim is indefinite. As the preliminary amendment indicates, claim 84 was patterned after claim 17 of the '864 patent. That claim, as the Examiner has undoubtedly noted, calls for a method of removing a "metal material" deposited on at least one side of the substrate. Clause (a) of claim 17, like clause (a) of claim 84, refers to "material". It therefore appears that the language of claim 17 was intended to be generic. If the Examiner would prefer, applicants would have no objection to rewriting claim 84 to call for a method of removing a "metal material". In all events, applicants believe that the claim is properly generic to the removal of

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Amendment A

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materials generally in the context of processing semiconductor wafers inasmuch as such processing is itself well known to those skilled in the art.

Reconsideration of the rejection of claim 84 is respectfully requested.

Applicants hereby submit that the claims copied from the Applied Materials '864 application are indeed supported by applicants' parent application. Therefore, the claims in this application are in condition for allowance and an interference should be declared forthwith.

Respectfully submitted,

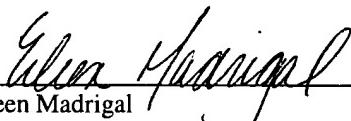
  
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